



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

D130-1048-012
Job Sheet 184673



Part No: D130-1048-012

Job Qty: 1 ea

Part Name: EC130 Skidtube Installation, RH



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 10/16/18

Job Tracking No:

Due Date: 10/31/18

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG D130-1048-012 REV.A IPP REV.A DP verify DD 17.07.09

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		10/31/18	0.00	0.00	Start Up Handfinish		
110	HandFinish	1 pcs		10/31/18	0.00	0.50	HandFinish4		
120	QC	1 pcs		10/31/18	0.00	0.00	QC5		
130	Packaging	1 pcs		10/31/18	0.00	0.00	Packaging1-6		
135	QC	1 pcs		10/31/18	0.00	0.00	QC4		
140	Packaging	1 pcs		10/31/18	0.00	0.00	Packaging3-2		
155	DC	1 pcs		10/31/18	0.00	0.00	DC		
165	QC21-SA	1 Ea		10/31/18	0.00	0.00	QC21		

Part Op 110 - ASSEMBLE AS PER DWG

Descriptions: 130 - BAG AND ID HARDWARE.

140 - identify and pack for shipping as per PPP D130-1048-012 Location: _____ PPP Rev: _____

155 - Photocopy blue file and create labels as per PPP D130-1048-012 chg 001

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
22201BC120090L	Bolt	1 Ea (1 ea)	90-Start up Operation	5107718
23111AG120LE-NA	Washer L _N 9025-1020 L	1 Ea (1 ea)	90-Start up Operation	5096095
AN3C5A	Bolt	8 Ea (8 ea)	90-Start up Operation	5095214
AN8C56A	Bolt	3 Ea (3 ea)	90-Start up Operation	5123457
ASN52320BH120N	Nut	1 Ea (1 ea)	90-Start up Operation	F1136585
D130-1048-042	EC130 Skidtube Assembly, RH	1 Ea (1 ea)	90-Start up Operation	5123015
D5465-2	FWD RH OEM Replacement Wearplate	1 Ea (1 ea)	90-Start up Operation	5119036
D5478-1	AFT OEM Replacement Wearplate	1 Ea (1 ea)	90-Start up Operation	5004477
D5569-1	Skidtube Blade	1 Ea (1 ea)	90-Start up Operation	5111425
D5570-1	Blade Plug	1 Ea (1 ea)	90-Start up Operation	5102643
D5594-1	GH Bushing	6 Ea (6 ea)	90-Start up Operation	5119449
D5594-3	GH Washer	6 Ea (6 ea)	90-Start up Operation	5104022
NAS1149C0332R	Washer	8 Ea (8 ea)	90-Start up Operation	5089465
NAS1149C0832R	Washer	3 Ea (3 ea)	90-Start up Operation	50766122
NAS1291C8	Nut, Self-Locking	3 Ea (3 ea)	90-Start up Operation	5112909
23111AG100LE	Washer	1 Ea (1 ea)	130-Packaging	
ASNA0045BC100L	Nut, Castellated	1 Ea (1 ea)	130-Packaging	
DHS411-101.3106	Metric Hex Head Aerospace Bolt	1 Ea (1 ea)	130-Packaging	
EN2367-18028 N/A	Cotter Pin	1 Ea (1 ea)	130-Packaging	

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Skid-tube ☐</td> <td style="width: 15%;">Cross tube ☐</td> <td style="width: 15%;">Water Jet ☐</td> <td style="width: 15%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																																																																		
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐																																																																		
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐																																																																		
Large Fab ☐	Composite ☐	Supplier ☐																																																																			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval																																																																	
Description Work Order Deviation		Disposition		Completed By																																																																	
				Lead hand / Supervisor Approval Verification																																																																	
				QC / QA Coordinator Approval																																																																	
Root Cause <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Environment ☐</td> <td style="width: 15%;">No Re-verification ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> </tr> </table>		Environment ☐	No Re-verification ☐	Design ☐	Operator ☐	Doc/Data ☐	Offset/Setup ☐	Equip/Tooling ☐	Supplier ☐	Handling/Pre ☐	Training ☐	Material ☐	Use for Testing ☐	Internal Transport ☐	Poor Information ☐	Tribal Knowledge ☐	Rushing ☐	LOA ☐	Product Improvement ☐	Substation ☐	Process Improvement ☐	Past Expiry Date ☐	Manufacturing Process ☐	Misidentified ☐	Past Due ☐	FAULT CATEGORY <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Pressure/Forced ☐</td> <td style="width: 15%;">Temperature/Cure ☐</td> <td style="width: 15%;">Power Loss/Surge ☐</td> <td style="width: 15%;">Positioned Wrong ☐</td> </tr> <tr> <td>Bending ☐</td> <td>Set-up ☐</td> <td>Folio/Program ☐</td> <td>Outside Dimensions ☐</td> </tr> <tr> <td>Centre Not Concentric ☐</td> <td>BOM/Route ☐</td> <td>Grain ☐</td> <td>Over/Under tolerance ☐</td> </tr> <tr> <td>Cracks ☐</td> <td>Broken/Damage/Defect ☐</td> <td>Weld ☐</td> <td>Part Incorrect ☐</td> </tr> <tr> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspection Incomplete/Unqualified ☐</td> <td>Wrong Stock Pulled ☐</td> <td>Part Lost/Missing ☐</td> </tr> <tr> <td>Cuffs ☐</td> <td>Contamination ☐</td> <td>Out of Sequence ☐</td> <td>Part Moved ☐</td> </tr> <tr> <td>Crushing ☐</td> <td>Countersink ☐</td> <td>Off-set ☐</td> <td>Drawing ☐</td> </tr> <tr> <td>Heat Treat ☐</td> <td>Cut Too Short ☐</td> <td>Mislabeled ☐</td> <td>Finish ☐</td> </tr> <tr> <td>Wave/Twist in Tube ☐</td> <td>Instructions Incomplete/Unclear ☐</td> <td>Fit/Function ☐</td> <td>Misread ☐</td> </tr> <tr> <td>Marks/Chatter ☐</td> <td>Drill Holes ☐</td> <td>Misaligned/off center ☐</td> <td>Turning Sequence ☐</td> </tr> </table>				Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Environment ☐	No Re-verification ☐																																																																				
Design ☐	Operator ☐																																																																				
Doc/Data ☐	Offset/Setup ☐																																																																				
Equip/Tooling ☐	Supplier ☐																																																																				
Handling/Pre ☐	Training ☐																																																																				
Material ☐	Use for Testing ☐																																																																				
Internal Transport ☐	Poor Information ☐																																																																				
Tribal Knowledge ☐	Rushing ☐																																																																				
LOA ☐	Product Improvement ☐																																																																				
Substation ☐	Process Improvement ☐																																																																				
Past Expiry Date ☐	Manufacturing Process ☐																																																																				
Misidentified ☐	Past Due ☐																																																																				
Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐																																																																		
Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐																																																																		
Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐																																																																		
Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐																																																																		
Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐																																																																		
Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐																																																																		
Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐																																																																		
Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐																																																																		
Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐																																																																		
Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐																																																																		
OTHER : ☐																																																																					

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	22201BC120090L	1	6	0
	23111AG120LE	1	0	0
	AN3C5A	8	1,715	0
	AN8C56A	3	30	0
	ASN52320BH120N	1	15	0
	D130-1048-042	1	0	0
	D5465-2	1	2	0
	D5478-1	1	2	0
	D5569-1	1	8	0
	D5570-1	1	8	0
	D5594-1	6	0	0
	D5594-3	6	0	0
	NAS1149C0332R	8	3,734	0
	NAS1149C0832R	3	396	0
	NAS1291C8	3	38	0
130-Packaging	23111AG100LE	1	9	0
	ASNA0045BC100L	1	9	0
	DHS411-101.3106	1	7	0
	EN2367-18028	1	0	0
	MS21141S-06-05	20	100	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



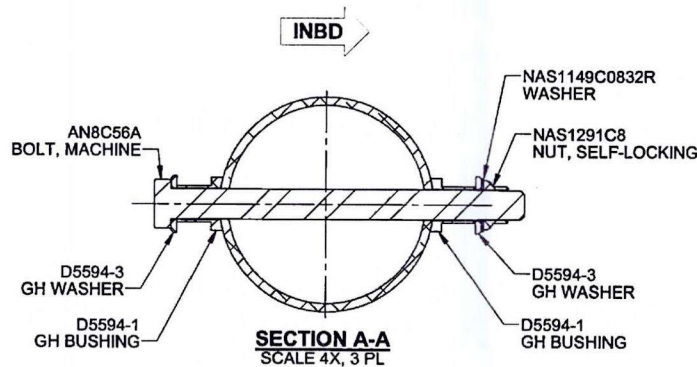
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

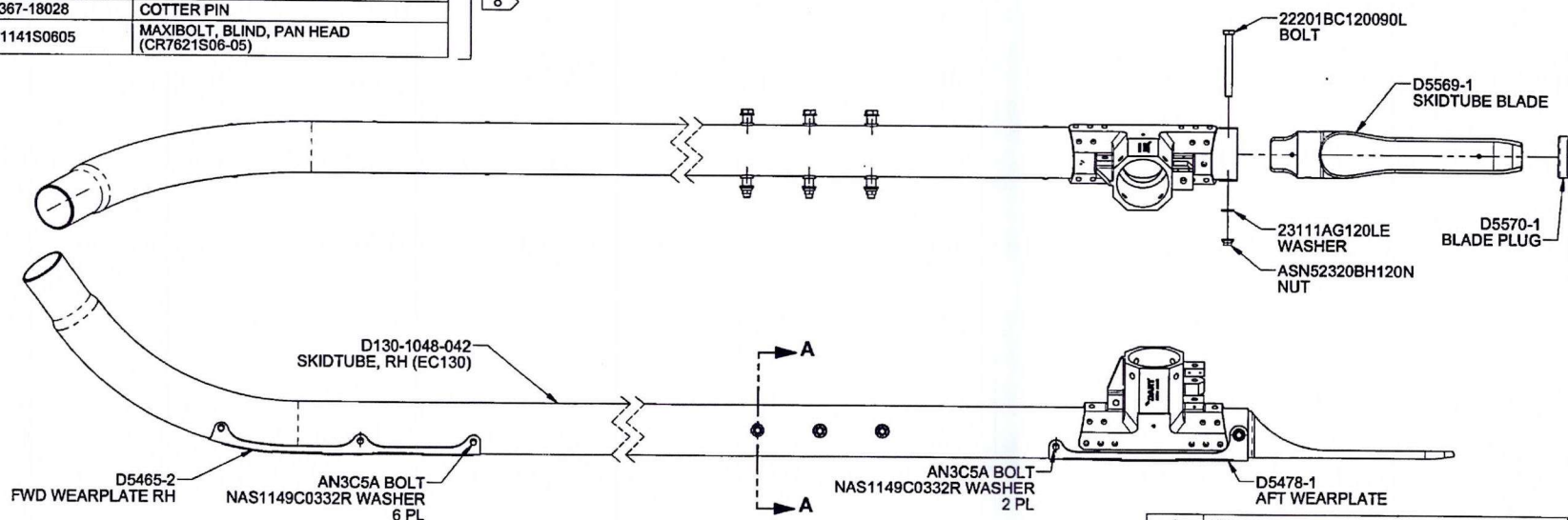
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

QTY -012	P/N	DESCRIPTION
X	D130-1048-012	SKIDTUBE INSTALLATION, RH (EC130)
1	D130-1048-042	SKIDTUBE ASSY, RH (EC130)
1	D5465-2	FWD WEARPLATE RH
1	D5478-1	AFT WEARPLATE
1	D5569-1	SKIDTUBE BLADE
1	D5570-1	BLADE PLUG
6	D5594-1	GH BUSHING
6	D5594-3	GH WASHER
1	22201BC120090L	BOLT
1	23111AG120LE	WASHER
8	AN3C5A	BOLT
3	AN8C56A	BOLT, MACHINE
1	ASN52320BH120N	NUT
8	NAS1149C0332R	WASHER
3	NAS1149C0832R	WASHER
3	NAS1291C8	NUT, SELF-LOCKING
1	23111AG100LE	WASHER
1	ASNA0045BC100L	NUT, CATELLATED
1	DHS411-101.3106	BOLT
1	EN2367-18028	COTTER PIN
20	MS21141S0605	MAXIBOLT, BLIND, PAN HEAD (CR7621S06-05)



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 184673 MWS
18-10-16



NOTES:
1) MATERIAL: N/A
2) FINISH: NONE
3) TOLERANCES: N/A
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: NONE
7) WEIGHT: 25.41 lbs
8) HARDWARE NOT SHOWN. TO BE SHIPPED LOOSE.

D130-1048-012 SKIDTUBE INSTALLATION, RH (EC130)

RELEASED

2018 OCT 02
EN 18-617

APPROVED

REV.	DESCRIPTION	ZF	18.05.08
DESIGN	NO	BY	DATE
DRAWN	ZF		
CHECKED	MW		
MFG. APPR.	JFS		
APPROVED	NO		
DE APPR.	CP		
DATE	18.05.08		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO.
D130-1048-012
REV. A
SHEET 1 OF 1
SCALE
NTS

COPYRIGHT © 2018 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS
NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: <u>184673</u> Part No. <u>D130-1048-012</u>	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
EN 2367-18028 not available 2311 AG 120LE not available		use MS24665-231 instead use LN9025-1220L instead		INSP 12 <i>[Signature]</i> 10/10/23	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: <u>184673</u> Part No. <u>D130-1048FA1/-012</u>	DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Eng. (Non-AW) ☐</td> <td>Engineering ☒</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Water Jet ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Supplier Quality ☐</td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Eng. (Non-AW) ☐	Engineering ☒	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Water Jet ☐	Large Fab ☐	Finishing ☐	Rec/Store/Packaging ☐	Supplier Quality ☐																																		
Skid-tube ☐	Cross tube ☐	Eng. (Non-AW) ☐	Engineering ☒																																																
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Water Jet ☐																																																
Large Fab ☐	Finishing ☐	Rec/Store/Packaging ☐	Supplier Quality ☐																																																
Date : _____		Sequence # : _____		QTY Affected : _____		MRB (QSI042)																																													
Description Work Order Deviation				Disposition																																															
Blade too loose Blade bolt too short				Install blade with Sikaflex use NAS 1149C0832R instead of LN 9025-1220L																																															
				INSP 12 <u>CP 10/11/16</u> Completed By <u>CP 10/11/16</u> Lead hand / Supervisor QC / QA Coordinator																																															
Root Cause <table style="width:100%;"> <tr><td>Operator</td><td>☐</td></tr> <tr><td>Manufacturing Process</td><td>☐</td></tr> <tr><td>Equip/Tooling</td><td>☐</td></tr> <tr><td>Handling/Presservation</td><td>☐</td></tr> <tr><td>Material</td><td>☐</td></tr> <tr><td>Product Improvement</td><td>☐</td></tr> <tr><td>Process Improvement</td><td>☐</td></tr> <tr><td>Human Factors</td><td>☐</td></tr> </table>		Operator	☐	Manufacturing Process	☐	Equip/Tooling	☐	Handling/Presservation	☐	Material	☐	Product Improvement	☐	Process Improvement	☐	Human Factors	☐	FAULT CATEGORY <table style="width:100%;"> <tr> <td>☐ Pressure/Forced</td> <td>☐ Contamination</td> <td>☐ Power Loss/Surge</td> <td>☐ Positioned Wrong</td> </tr> <tr> <td>☐ Bending</td> <td>☐ Misaligned/off center</td> <td>☐ Folio/Program</td> <td>☐ Outside Tolerance</td> </tr> <tr> <td>☐ Crushing</td> <td>☐ BOM/Route</td> <td>☐ Grain Direction</td> <td>☐ Drawing</td> </tr> <tr> <td>☐ Cracks</td> <td>☐ Broken/Damage/Defect</td> <td>☐ Weld</td> <td>☐ Finish</td> </tr> <tr> <td>☐ Crimp/Kink/Ripple/Wave/Twist</td> <td>☐ Incomplete/Unclear Instructions</td> <td>☐ Wrong Stock Pulled</td> <td>☐ Part Lost/Missing</td> </tr> <tr> <td>☐ Marks/Chatter</td> <td>☐ Drill Holes</td> <td>☐ Out of Sequence</td> <td>☐ Misread</td> </tr> <tr> <td>☐ Mislabeled</td> <td>☐ Fit/Function</td> <td>☐ Off-set/Set-up</td> <td></td> </tr> </table>						☐ Pressure/Forced	☐ Contamination	☐ Power Loss/Surge	☐ Positioned Wrong	☐ Bending	☐ Misaligned/off center	☐ Folio/Program	☐ Outside Tolerance	☐ Crushing	☐ BOM/Route	☐ Grain Direction	☐ Drawing	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Finish	☐ Crimp/Kink/Ripple/Wave/Twist	☐ Incomplete/Unclear Instructions	☐ Wrong Stock Pulled	☐ Part Lost/Missing	☐ Marks/Chatter	☐ Drill Holes	☐ Out of Sequence	☐ Misread	☐ Mislabeled	☐ Fit/Function	☐ Off-set/Set-up	
Operator	☐																																																		
Manufacturing Process	☐																																																		
Equip/Tooling	☐																																																		
Handling/Presservation	☐																																																		
Material	☐																																																		
Product Improvement	☐																																																		
Process Improvement	☐																																																		
Human Factors	☐																																																		
☐ Pressure/Forced	☐ Contamination	☐ Power Loss/Surge	☐ Positioned Wrong																																																
☐ Bending	☐ Misaligned/off center	☐ Folio/Program	☐ Outside Tolerance																																																
☐ Crushing	☐ BOM/Route	☐ Grain Direction	☐ Drawing																																																
☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Finish																																																
☐ Crimp/Kink/Ripple/Wave/Twist	☐ Incomplete/Unclear Instructions	☐ Wrong Stock Pulled	☐ Part Lost/Missing																																																
☐ Marks/Chatter	☐ Drill Holes	☐ Out of Sequence	☐ Misread																																																
☐ Mislabeled	☐ Fit/Function	☐ Off-set/Set-up																																																	
Other/Details:																																																			